

## PREFEASIBILITY STUDIES OF THE AZUFRAL GEOTHERMAL FIELD

(TC-97-06-34-4)

### EXECUTIVE SUMMARY

<b>Requester:</b>	Republic of Colombia
<b>Executing agency:</b>	Instituto de Investigación e Información Geocientífica, Minero-Ambiental y Nuclear [Institute for Geoscientific, Mining and Environment, and Nuclear Research and Information] (Ingeominas)
<b>Financing:</b>	IDB (Japanese Trust Fund for Consultancy): US\$1,500,000 Local contribution: US\$ 300,000 Total: US\$1,800,000
<b>Terms:</b>	Execution period: 18 months Disbursement period 24 months
<b>Objectives:</b>	The objective of this proposed nonreimbursable technical cooperation (TC) operation is to support the financing of prefeasibility studies for the Azufral geothermal field. The general objective of the prefeasibility studies is to determine the technical and economic advisability of preparing feasibility studies on the use of geothermal resources in the Azufral field, for the purpose of electric power generation in strict observance of environmental and social considerations.
<b>Description:</b>	The prefeasibility studies include geo-scientific studies; social and environmental analyses; a review of the political, legal, and regulatory context for geothermal resource development; and a probability-oriented economic and financial prefeasibility analysis. The feasibility studies per se, which would include exploratory drilling and address overall feasibility, are not included in this operation and can go forward only if recommended by the prefeasibility studies. If so recommended, they would be executed under private initiative.
<b>Environmental and social review:</b>	As part of the prefeasibility studies on the Azufral geothermal field, environmental and social studies will be conducted to identify the potential impact of developing the field on natural resources and human groups. The subsequent feasibility studies would include the design of appropriate mitigation measures.

<b>Benefits:</b>	The studies will provide: a model of the geothermal resource; an assessment of the sociological and environmental impact of developing it; policy recommendations with respect to private sector development of the geothermal resource, as well as on legal and regulatory matters. It will also provide an estimate of the financial resources required to develop this resource combined with an analysis of its projected value—in economic as well as financial terms.
<b>Risks:</b>	There is the risk of reaching a mistaken conclusion in favor of continuing with the actual feasibility studies. To mitigate this risk, the best possible illustrated terms of reference have been prepared by an international specialist with broad experience in the identification of geothermal resources. This will in turn reduce the risk of investing unnecessarily in subsequent feasibility and/or investment studies.
<b>The Bank's country and sector strategy:</b>	This operation is consistent with the objective of sustainable growth set forth in the most recent country paper, in that it would help to identify opportunities for private sector participation in the development of productive infrastructure and environmental protection.
<b>Special contractual clauses:</b>	As conditions precedent to the first disbursement, the contract with the consulting firm must have been signed and the Project Manager must have been designated.
<b>Social and poverty classification:</b>	This TC is not a specifically poverty-targeted operation.
<b>Exceptions to Bank policy:</b>	This operation does not entail exceptions to Bank policies and procedures. Furthermore, as a nonreimbursable JCF operation, it will be conducted in accordance with the consulting contract procedures stipulated by the donor.